



X-Plain™

Aorto-Bifemoral Bypass

Reference Summary

Clogged arteries in the abdomen and legs can lead to severe pain in the legs.

This may result in a total loss of blood supply to the legs. If this occurs, one or both legs could begin to deteriorate. The dead or dying tissue may have to be amputated.

Doctors may recommend surgery for people suffering from clogged arteries.

If your doctor recommends surgery for you, the decision whether or not to have surgery is also yours.

This reference summary will help you understand better the benefits and risks of this surgery.

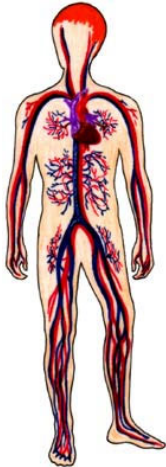
Anatomy

Blood is carried to and from the heart by blood vessels.

The blood vessels that carry blood from the heart to other organs are called arteries. Blood returns to the heart through the blood vessels called veins.

Normal arteries have a smooth wall and are wide open. Such

arteries are common in children and young adults.



The arteries can get clogged with plaque, which consists primarily of cholesterol debris.

As the plaque layer thickens, it becomes more difficult for the blood to reach the organs.

This condition is called hardening of the arteries.

The heart pumps blood into a big artery known as the aorta.

The aorta divides into two main arteries in the abdomen called iliac arteries.

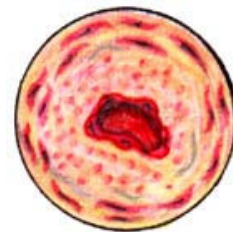
These in turn branch off into the femoral arteries, which

supply most of the blood to the legs.

Symptoms and Their Causes

When cholesterol debris clogs the blood vessels in the lower abdomen or upper leg, the blood flow to the legs is decreased.

This causes the legs to hurt, especially after walking or exercising. This condition is known as “arterial or vascular claudication.”



If the loss of blood supply becomes severe, the affected leg could die off, and may have to be cut-off, or amputated.

Alternative Treatments

A healthy, low fat diet may reduce plaque buildup.

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Refraining from smoking is essential to prevent plaque buildup.

Regular exercise could also help to reduce and prevent plaque buildup.

Certain medications may also be appropriate.

An alternative treatment requires the insertion of a catheter into the artery. This procedure is known as “angioplasty.”

During this procedure, the plaque is crushed by a small balloon, which is inserted into the artery through a catheter.

Special lasers or other mechanical instruments, which are inserted into an artery through a catheter, are sometimes used to open the clogged segment, instead of a balloon.

If your arteries are significantly blocked, but you are not a candidate for the previously described procedures, your doctor may recommend surgery.

Surgery helps to bypass the plaque, reduce the pain, and prevent the legs from dying off.

Surgical Treatment

The aim of the operation is to allow the blood to flow freely into the legs from the aorta.

Depending on the operation, one or more incisions may be needed.

To open a pathway between the legs and the aorta, a tube-like graft is placed from the aorta into one or both femoral arteries. This graft functions as a replacement artery that bypasses the clogged arteries going to the legs. The graft is made of synthetic material that has been extensively used and has been shown to be very safe.

At the end of the operation the incision(s) are closed.

Your doctor will tell you how long you are likely to stay in the hospital. This depends on several factors, such as your age and medical condition. Depending on how quickly you recover, you may go home after spending two or three nights at the hospital.

Risks and Complications

This operation is very safe. There are, however, several possible risks and complications, which are unlikely, but possible.

You need to know about them just in case they happen. By being informed, you may be able to help your doctor detect complications early.

The risks and complications include those related to

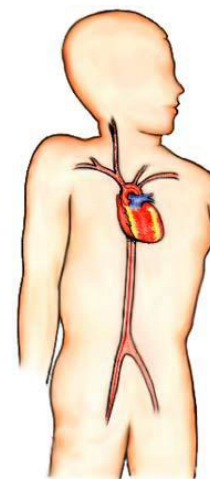
anesthesia and those related to any type of surgery.

Risks related to anesthesia include, but are not limited to:

- Heart attacks,
- Strokes, and
- Pneumonia.

These risks will be discussed with you in greater detail by your anesthesiologist.

Blood clots in the legs can occur. This usually shows up a few days after surgery. They cause the leg to swell and hurt.



These blood clots can be dislodged from the legs and go to the lungs, where they will cause shortness of breath, chest pain, and possibly death. Sometimes the shortness of breath can happen without warning.

It is therefore extremely important to let your doctors know if any of these symptoms occurs.



Getting out of bed shortly after surgery may help decrease the risks of blood clots in the legs.

Some of the risks are seen in any type of surgery. These include:

- Infection, deep or at the skin level.
- Bleeding, either during or after the operation.
- A skin scar that may be painful or ugly.

Though rare, infections, as well as bleeding and scarring may occur. If a deep infection occurs, the graft may need to be taken out and replaced.

Other risks and complications are related specifically to this surgery. These, again, are very rare. However, it is important to know about them.

The following organs in the abdomen and legs are close to the surgical area. They may be damaged directly, or their blood supply could be affected.

The abdominal organs such as liver, stomach, and intestines (including the small intestines and colon) could be damaged.

The kidneys, the bladder, and the tubes that connect them could be injured.

The internal female organs such as the uterus and ovaries could be affected.

There is even a rare chance of spinal cord stroke. This could create problems with the bowel, bladder, and sexual function.

Nerves going to the legs could also be affected, leading to paralysis and decreased sensation in the legs.

All of these complications are extremely rare. Treating these rare complications may necessitate other operations.

However, the damage could be irreversible and, very rarely, death may occur.

There is also the possibility of the graft clogging, creating another blockage in the future.

Hernias through the incision or incisions are possible. This happens when the internal wall of the abdomen is weak, and intestines can push under the skin.

This may require another operation.

After the Surgery

Your doctor may recommend a healthy, low fat, low salt diet.

Moderate exercise and refraining from smoking will also help to keep the arteries from clogging again.

Your doctor will tell you how long it will take before your incisions are completely healed, and when you can go back to work. This depends on:

- Your age,
- Type of work,
- Medical condition, as well as
- Other factors.

Summary

Clogged femoral arteries can cause pain in the legs and can make a person's legs deteriorate to the point where they need to be amputated.

Bypassing the clogged arteries in the lower abdomen and upper legs, using a graft, is very helpful in reducing the pain and preventing leg amputation.

This operation is safe with good results. However, as you have learned, complications may happen. Knowing about them will help you detect them early if they happen.